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Mattresses and bedding promoting wellbeing through:

- Natural and organic materials
- Reduced chemical footprint
- Replacement of traditional materials



The Goal



Create products without using materials known or suspected to be connected to health and development impairment.

- Endocrine disruption
- Cancer
- Developmental Delays
- Asthma
- Other Health Issues

The Challenges

- Waterproofing without PFCs
- Federal Flammability Standards 1632 & 1633
- Transparency/lack of disclosure of material ingredients

After product was introduced, challenges included:

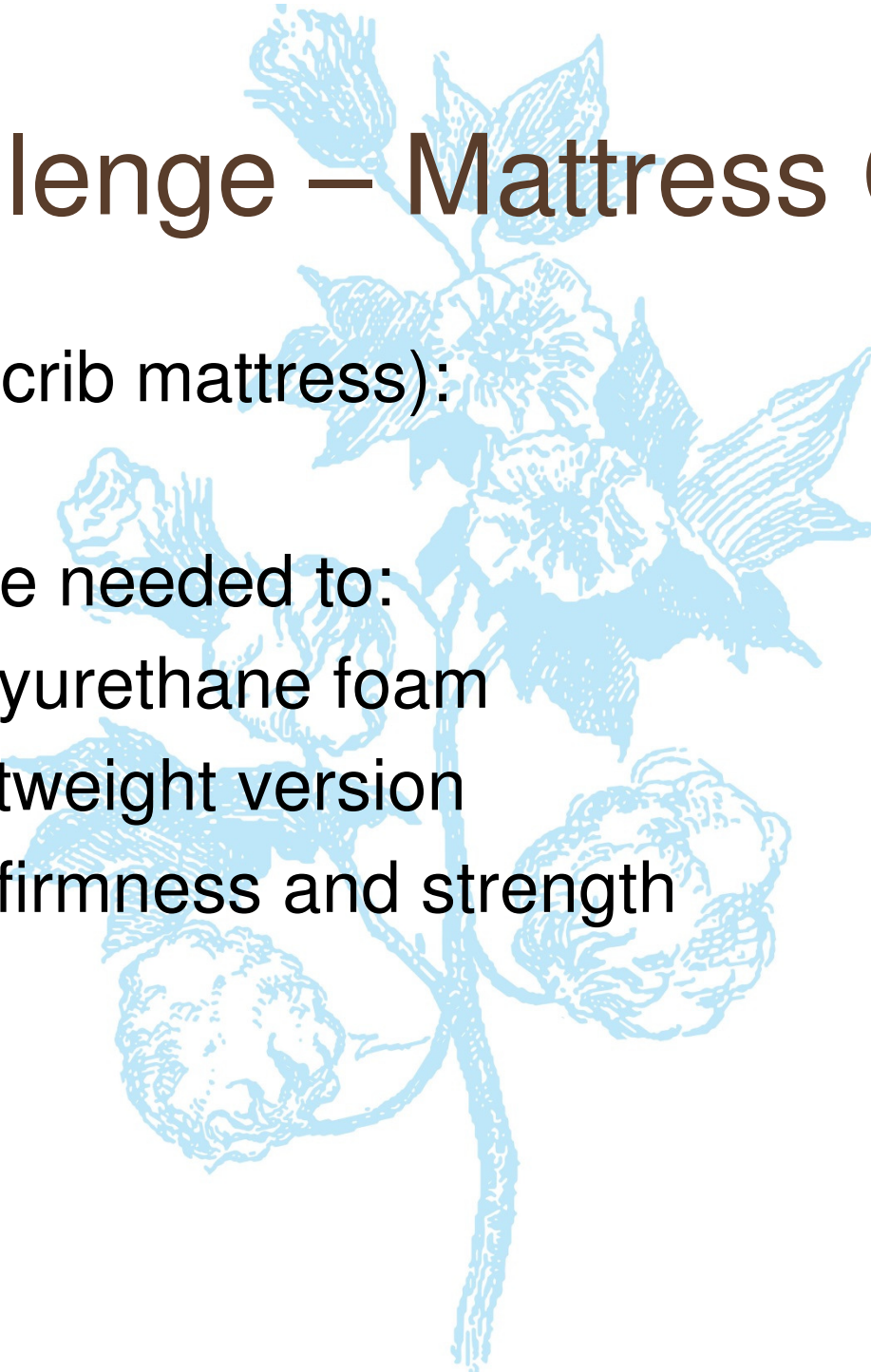
- Marketing the *absence* of materials

Challenge – Mattress Core

Inner core (crib mattress):

We knew we needed to:

- Avoid polyurethane foam
- Offer lightweight version
- Maintain firmness and strength



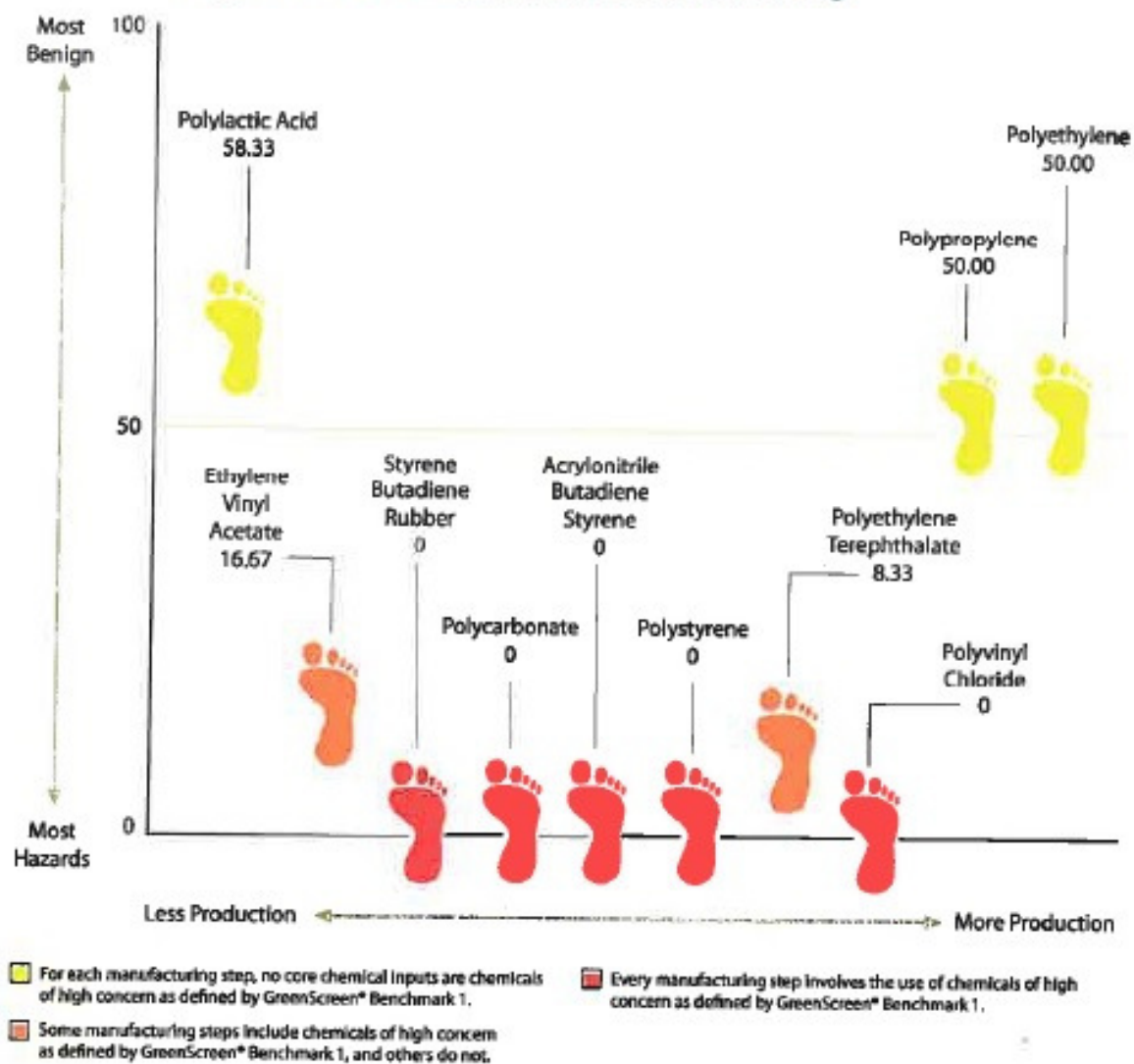
Finding Solutions



Inner core:

- Natural fibers
- Polyethylene foam **INSTEAD** of polyurethane foam
- Edge design

FIGURE ES-1 Progress to Safer Chemicals in Polymer Manufacturing



The Plastics Scorecard, v1.0, Clean Production Action, July 1, 2014

Challenge – Surface Material



We knew we needed:

- A waterproof design without vinyl or perfluorinated compounds (PFCs)
- To know WHAT was in the fabric (transparency)
- Ease of cleaning for parents

Finding Solutions



Surface material (crib mattress):

- Certified organic provided one way to know and monitor materials
- Food grade polyethylene proved sensible waterproofing solution, earned patent
- Testing
- Working with vendors

Challenge – Meeting Government Flammability Standards

We knew we needed:

- Meet existing standards 1632 & 1633



Finding Solutions



Meeting Flammability Standards:

- Use less flammable materials
- Design to allow flammability to be met without chemicals or additives

Untreated Polyurethane Foam vs Untreated Organic Cotton



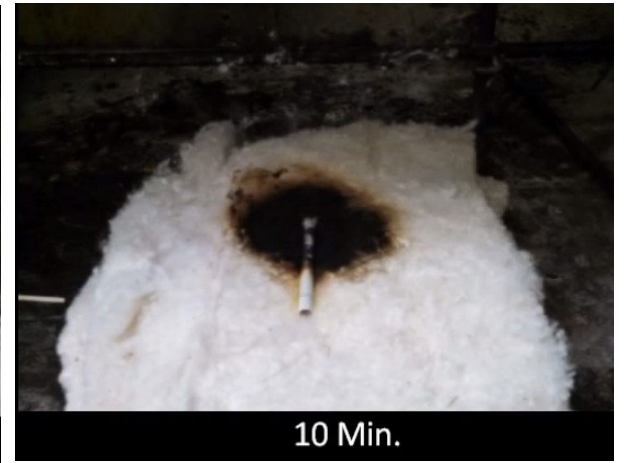
<https://www.youtube.com/watch?v=Y1BePx9giaQ>



8"x8" Untreated Cotton



5 Min.



10 Min.



20 Min.



40 Min.



40 Min. (Pulled Back to View Inside)

Cotton Smolder Demonstration July 1, 2013

Challenge – Lower Price Point

We knew we needed:

- Develop a way to offer a safer product to consumers who could not afford organic
- Reduce material costs while maintaining health benefits

Finding Solutions

- Food grade polyethylene/polyester
- New brand – Lullaby Earth



Challenge - Marketing what's NOT in the product

We knew we needed to:

- Differentiate our product
- Educate
- Avoid a negative focus

Finding Solutions

Marketing what's NOT in the product:

- GOTS certification for ENTIRE product for organic products
- Additional certifications – GOLS, GREENGUARD, Endorsements & Recommendations
- Viral Outreach
- Educate whenever possible

GOTS

- Transparency
- Reliability
- Accountability



New vs. Old Room Fire Final UL video by NIST (National Institute of Standards and Testing)

<https://www.youtube.com/watch?v=aDNPhq5ggoE>



New vs. Old Room Fire Final UL (at 3 min, 33 seconds)



New vs. Old Room Fire Final UL Flashover Times Legacy Room 29:25, Modern Room 3:40

Comparison of Room Furnishings

Legacy Room

Modern Room

Time to Flashover
29:25

Time to Flashover
3:40

Underwriters Laboratories